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To the historical part the author devotes about 300 pages, which, as he informs us in the introduction, has been considered throughout from the standpoint of the evolution hypothesis. This is a new and commendable feature in an American text-book, as previous authors have made it only a secondary matter.

The earlier floral and faunal characteristics of the American continent are illustrated by well chosen figures from the works of Dawson, Hall, Meek, Worthen, Gabb, and others. The carboniferous flora receives a large share of attention, with many figures from Dawson and Lesquereux. Some of the figures of vertebrate remains are not as good as they might have been; some, as those of *Glyptodon*, *Megatherium* and the head of *Sivatherium*, are restorations made before enough of the skeleton was known to make exact figures, which have since been superseded by more recent studies from more perfect material.

The value of this part of the work is somewhat curtailed by the use in some instances of a nomenclature which is not used by European or many American palæontologists. As examples we cite the names *Edestosaurus*, *Tylosaurus*, *Lestosaurus* and *Dinoceras*, which have never been distinguished from genera previously named, and *Brontotherium*, which there can be but little doubt is the same as the genus long since called *Titanotherium*, by Leidy, and still earlier *Menodus* by Pomel.

FOSTER'S PHYSIOLOGY.[1]—In introducing advanced students to the study of physiology, Mr. Foster starts from a description of the Amœba and its physiology, and having described the vital qualities of the protoplasm of an Amœba, he leads the reader to study the vital qualities of the higher animals, which, as taught by morphological studies, "are in reality groups of Amœbæ peculiarly associated together. All the physological phenomena of the higher animals are similarly the results of these fundamental qualities of protoplasm peculiarly associated together. The dominant principle of this association is the physiological division of labor corresponding to the morphological differentiation of structure. Were a larger or 'higher' animal to consist simply of a colony of undifferentiated Amœbæ, one animal differing from another merely in the number of units making up the mass of its body, without any differences between the individual units, progress of function would be an impossibility. The accumulation of units would be a hindrance to welfare rather than a help. Hence, in the evolution of living beings through past times, it has come about, that in the higher animals (and plants) certain groups of the constituent amœbiform units or cells have, in company with a change in structure, been set apart for the manifestation of certain only of the fundamental properties of protoplasm, to the exclusion or at least to the complete subordination of the other properties." This extract from the introductory chapter strikes the keynote to the method of treatment of the subject. It is without doubt, and we have the word of a competent physiological expert for it, the most compact, clear and advanced text book of physiology in the language. The style is simple, clear and concise, and the preface is written in a happy vein with a dry humor that is unexpected but not the less telling and forcible. The book is designed chiefly for medical students, who have already mastered Huxley's Elementary Lessons in Physiology. We think the book would have been improved by the addition of more illustrations than there are; not perhaps of machinery, but giving the results of important physiological experiments. The chapters on the Fundamental Properties of Nervous Tissues, and the Brain, are particularly good.

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[1] *A Text Book of Physiology.* By M. FOSTER, M.A., M.D., F.R.S., Prælector of Physiology and Fellow of Trinity College, Cambridge. London: Macmillan & Co., 1877, 8vo, pp. 559.

Semper's Eyes of the Vertebrate Type on the Back of Snails.[1]—This work gives the results of Professor Semper's extensive and brilliant researches on the small organs of sight, or eye-specks, scattered over the back of a shelless snail (*Onchidium*) of which he has examined nineteen species, some of them living in the Philippine islands. In the author's opinion these eye-specks have almost all the elements of the vertebrate eye. These eyes are different in structure from the tentacular eyes of the Onchidium and other land snails, as the nerve arising from them are not thrown off from the cerebral ganglion, but from the visceral nerve-centre. Prof. Semper describes the arrangement, size and number of the dorsal eyes, with their structure, and gives remarks on their developmental history; a comparison of the dorsal eyes of Onchidium with those of other animals, discusses the biological considerations resulting from these facts, and in the closing remarks of a theoretical nature, discourses on the primitive origin of dorsal eyes, and on the "Monophyletic or polyphyletic advance in the formation of the simplest dorsal eyes." We can bear witness to the beauty of the microscopic sections, having glanced at some of them through the kindness of Professor Semper during his visit in the United States last autumn. The plates are colored lithographs, and are effectively and skillfully drawn.

Zirkel's Microscopical Petrography.[2]—This subject has in the hands of Zirkel, Boricky and others in Germany and Austria, attained a good degree of development, but little attention

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[1] *Reisen im Archipel der Philippinen*, von Dr. C. Semper. Zweiter Theil. Wissenschaftliche Resultate. Drittu Band. Land-Mollusken. Ueber Seh organe vom Typus der Wirbel thier augen auf dem Rücken von Schnecken. Von Dr. C. Semper. Mit fünf Tafeln Colorirter abbildungen, Wiesbaden, 1877. 4to, pp. 46.

[2] *United States Geological Exploration of the Fortieth Parallel.* Clarence King, Geologist-in-Charge. Microscopical Petrography. By Ferdinand Zirkel. Illustrated by twelve plates. Washington, 1876. 4to, pp.